



**Australian Workforce
and Productivity Agency**

www.awpa.gov.au

ACDICT AGM – AWPA ICT Workforce Study

Mr Robin Shreeve
AWPA CEO

8 July 2013
Esplanade Hotel, Fremantle

Overview

1. What is AWPA
2. Future Focus AWPA's National Workforce Development Strategy 2013
3. AWPA's ICT workforce study



The Australian Workforce and Productivity Agency



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Future focus: 2013 National Workforce Development Strategy

The world of work is changing



Approach to the 2013 strategy

Scenario → **Modelling** → **Analysis** → **Strategy**

Plausible worlds (but not predicting the future!)

Projections of demand & supply side implications of the scenarios

Analysing the uncertainty, commonality, differences and risks of the scenarios

The policy recommendations balance aspirational goals and risks, after assessing key differences between the scenarios

Each process informs the next

The four scenarios



Flexible migration



Varying fiscal capacity

Fluctuating labour participation



Slightly differing industry structures



- Commonalities**
- Ageing population
 - Importance of Asia
 - Technology
 - Sustainability challenge

Australia will need a more highly skilled and qualified workforce

Our modelling indicates that by 2025

- 3.5 million more people in our workforce
- More people with post-school qualifications
- 39% of workforce will be professionals and managers
- Service industries will experience largest increase





Industry continues to demand higher level qualifications

- Higher skilled jobs are projected to grow at around 1.6 times the rate of low skilled jobs in a range of scenarios.
- An additional 1.7 million* people with qualifications at Certificate III or above are expected to be needed from 2011 to 2015 in the workforce under a high growth scenario.
- This comprises both employment growth and replacement.

*The 1.7 million figure is comprised of an additional 1.23 million employed people through employment growth holding Certificate III or above, and almost 450,000 people holding Certificate III or above to replace people who have left the workforce.

Education qualifications forecasts

Share of those employed with post-school qualifications, by 2025

	Long Boom	Smart Recovery	Terms of Trade Shock	Ring of Fire
Proportion with post school qualifications	75.4%	70.3%	73.7%	65.0%
Annual number of additional qualifications required to 2025	831,900	643,800	726,100	411,500

In 2011 the share of employed persons with a post-school qualification was 59.8%

Source: Deloitte Access Economics (2012) 'Economic modelling of skills demand and supply' - derived from p.iv and tables 5.18-5.21

Australia will need a more highly skilled and qualified workforce

Total qualifications held by persons employed, unemployed and not in the labour force, by scenario and qualification level ('000)

Qualification held	2011	2025 ('000)				Average annual change 2011–25 (%)			
		Long boom	Smart recovery	Terms of trade shock	Ring of fire	Long boom	Smart recovery	Terms of trade shock	Ring of fire
Postgraduate	1,588.0	3,104.7	2,714.9	2,941.4	2,187.5	4.9	3.9	4.5	2.3
Undergraduate	4,126.3	7,256.9	6,475.3	6,877.5	5,435.7	4.1	3.3	3.7	2
Advanced diploma/Diploma	2,299.5	3,842.3	3,428.2	3,632.4	2,920.1	3.7	2.9	3.3	1.7
Certificate III & IV	3,597.6	6,195.8	5,323.0	5,671.9	4,441.9	4	2.8	3.3	1.5
Certificate I & II	1,563.1	2,079.2	1,914.9	1,961.2	1,774.6	2.1	1.5	1.6	0.9
Total	13,174.6	22,479.0	19,856.4	21,084.5	16,759.8	3.9	3	3.4	1.7

Derived from Deloitte Access Economics, 2012, *Economic modelling of skills demand and supply*, Tables 5.10–5.17.

Positioning the Australian workforce for the future

Increasing qualifications to meet growing demand for higher skills

Improving productivity in the workplace

Building labour force participation to meet current and future needs

Raising language, literacy, and numeracy skill levels

Enabling individuals and the tertiary system to be more adaptive

Strengthening quality in the tertiary sector

Investing in skills will pay for itself

Enabling individuals and the tertiary system to be more adaptive

Career advice

- facilitate lifelong career development

Work ready graduates

- support transition from study and training to work

Training packages

- investigate how to best build individuals' adaptive capacity

New learning paradigm

- support innovation and professional development to develop a flexible, adaptable workforce

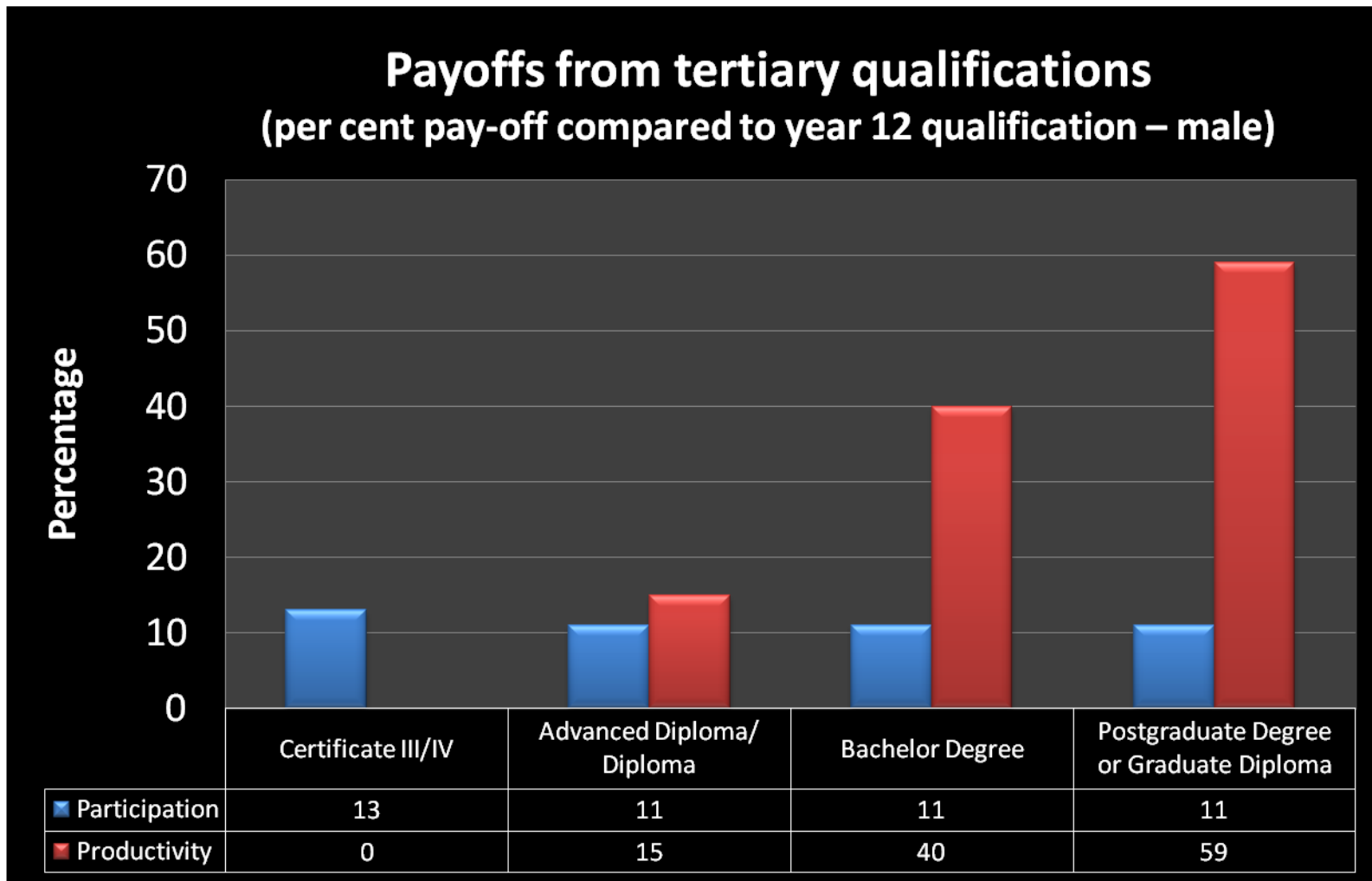
Integrated tertiary sector

- improve interface between HE and VET to provide consistency in funding and articulation

ICT in teaching and learning

- embed new technologies to reflect international best practice

Student returns – VET and HE

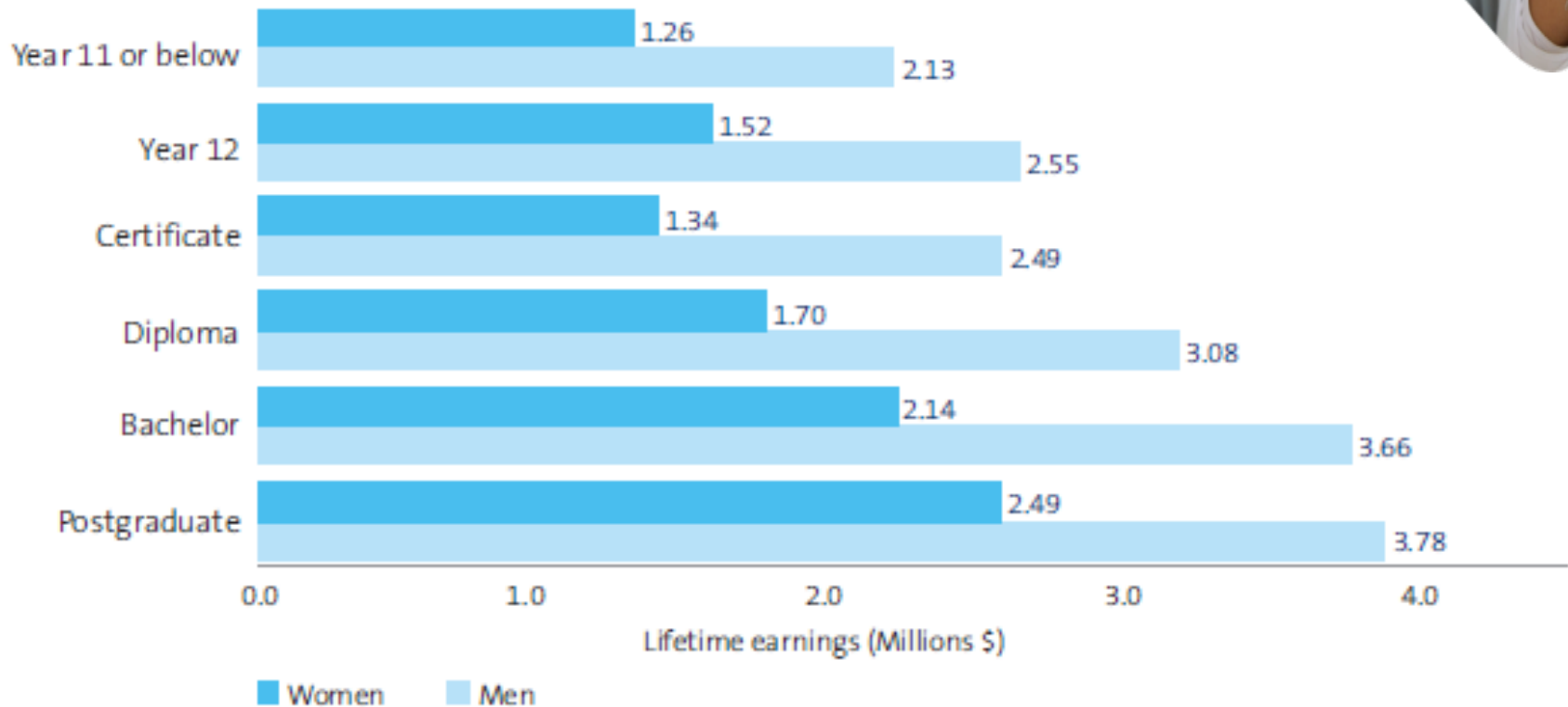


Source: KPMG Econtech , *Economic Modelling of Improved Funding and Reform Arrangements for Universities* (2010)

Gender segregation



Figure 25 Lifetime employee income of persons at age 25 years, by gender



Source: NATSEM calculation from 2009–10 Survey of Income and Housing Basic Confidentialised Unit Record.

Which pathway for young people?

“.....for males two paths stand out: Year 12 followed by university study; and Year 12 followed by an apprenticeship. Apprenticeships and traineeships score well for ‘satisfaction with life’. For females, the best path is Year 12 followed by university study, and this is true for those with a relatively low academic orientation as well as those with a high academic orientation”

Source: Tom Karmel and Shu-Hui Liu (2011), *Which paths work for which young people?*, LSAY, p. 13.

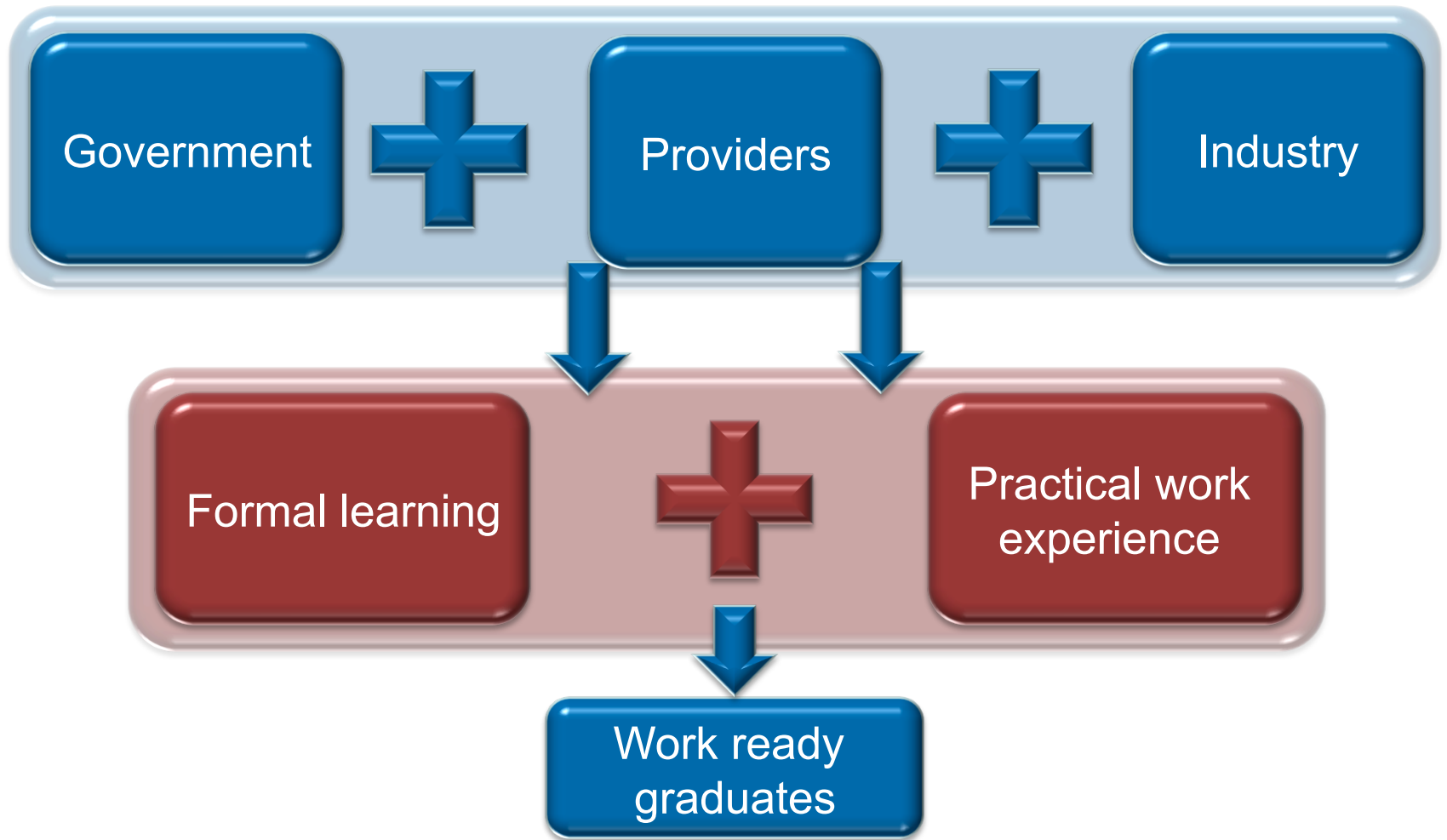


Gender mix in some NSW Universities

University	Total Students	Males %	Females %
Australian Catholic University	22,303	27.6	72.4
Charles Sturt University	38,178	38.8	61.2
Macquarie University	37,876	44.1	55.9
Southern Cross University	15,050	35.9	64.1
University of New England	18,884	36.0	64.0
University of Newcastle	33,613	44.0	56.0
University of Western Sydney	39,310	44.6	55.4
University of Sydney	51,168	42.8	57.2
UTS	36,222	49.5	50.5
UNSW	50,613	54.0	46.0

Source – MyUniversity website

Work integrated learning can bridge the gap between education and training and work



Investing in skills will pay for itself

Industry demand for qualifications is projected to increase by between 3% and 3.9% pa



We recommend the expansion of qualification enrolments by a minimum of 3% pa

Public and private funding for tertiary education needs to expand by a little more than 3% pa



Increased funding is in line with projected long term economic growth


The benefits far outweigh the cost:

- the additional public funding in 2025 projected by AWPAs exceeds that in the IGR 2010 projection by \$2.1 billion
- the additional public revenues from the effect of increased qualifications on labour force participation, employment and GDP is estimated at between \$6.7 billion and \$24.8 billion

Future Focus

Realising Australia's growth potential through a highly skilled and adaptable workforce where skills are used effectively to meet the increasingly complex needs of industry and that individuals are able to fulfil their potential.



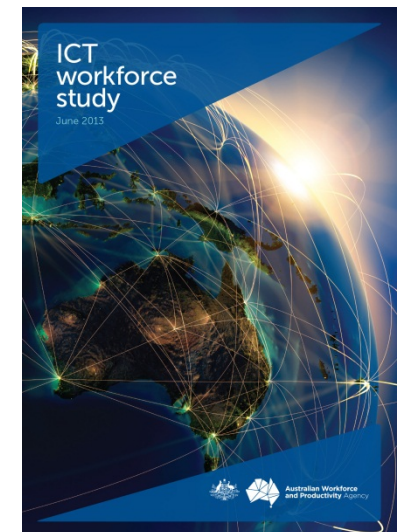
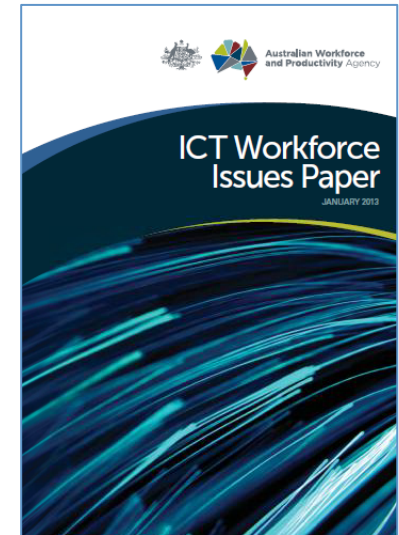


ICT workforce study

July 2013

The AWPA ICT workforce study

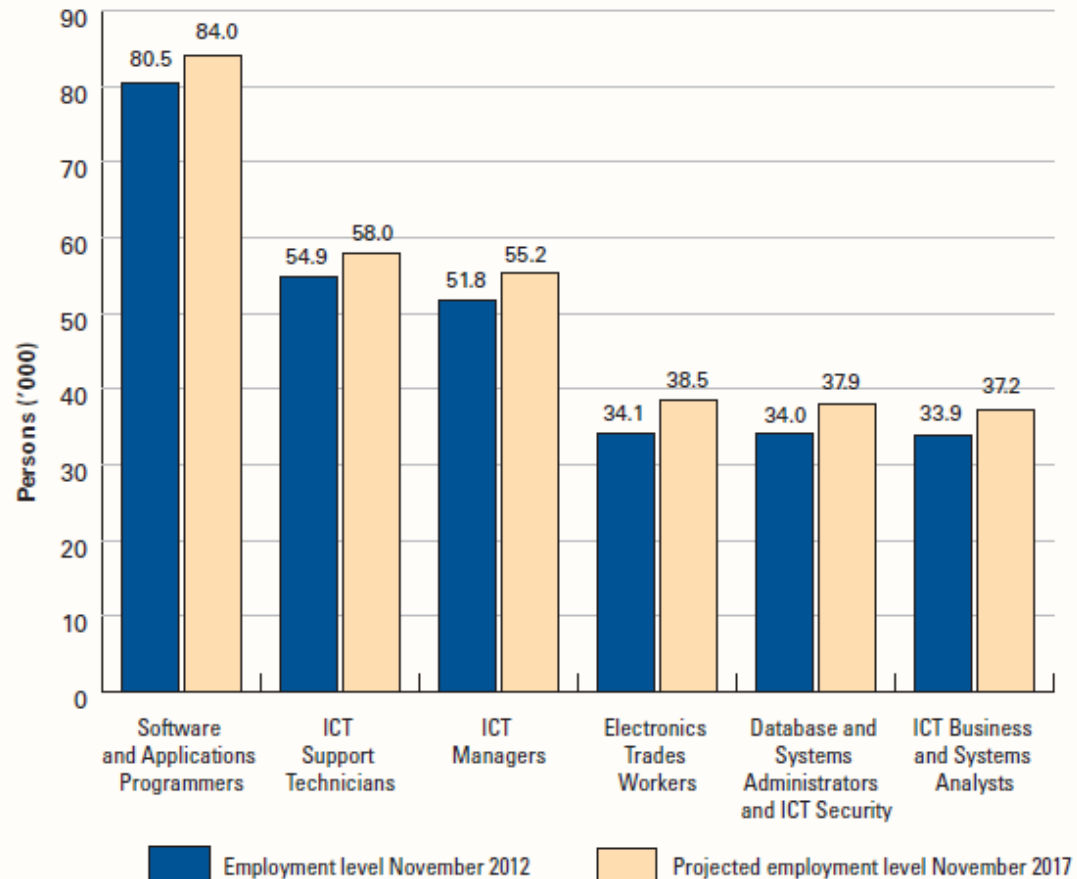
- Why ICT?
 - *ICT is a vital enabler of productivity and innovation in the Australian economy, but much depends on the availability of specialised ICT skills in the Australian marketplace.*
- Focus of the study is the development of a set of workforce development strategies to improve the attraction, development and utilisation of ICT skills.
- AWPA released an Issues Paper in January 2013, received 19 submissions and convened a roundtable in February 2013.
- The final report will be released shortly.





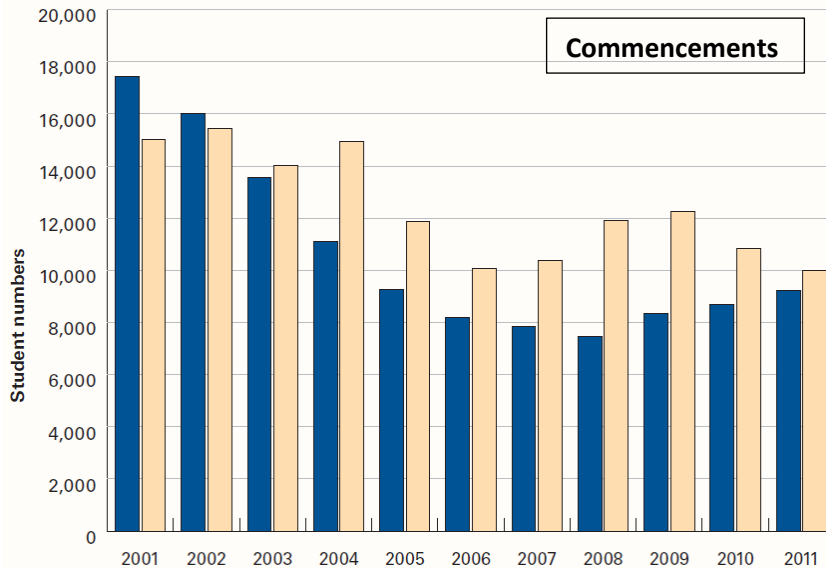
The data picture – employment trends

Employment projections for the six highest employing ICT occupations, 2012 to 2017

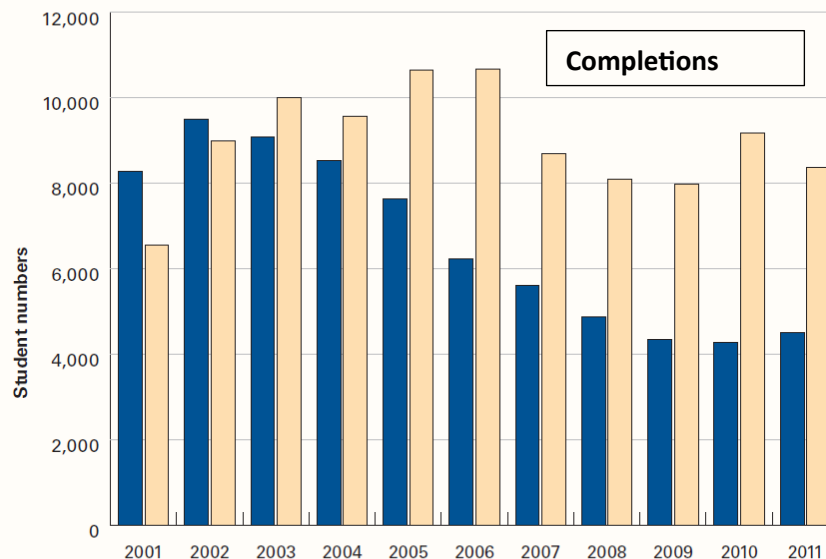


Source: DEEWR, 'Occupation projections to November 2017', 2013 employment projections, lmip.gov.au/default.aspx?LMIP/Publications/IndustryEmploymentProjections.

The data picture – domestic ICT courses



After a decade of decline, marginal improvements are evident in commencements and completions in ICT-related higher education courses.

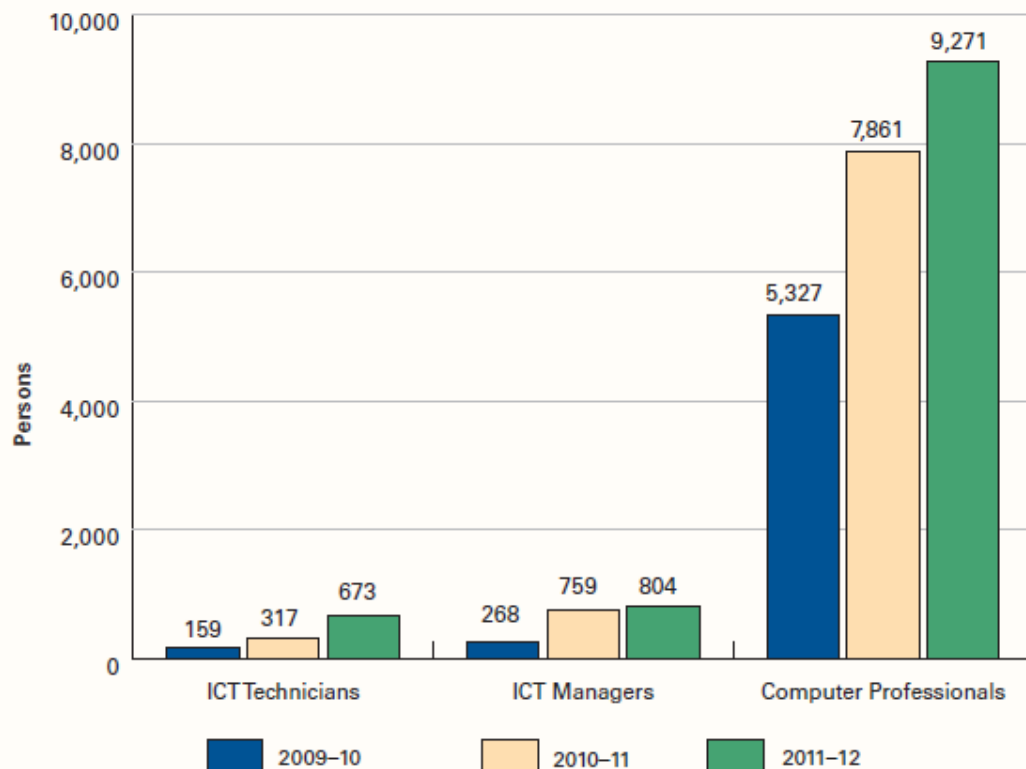


■ Domestic ■ International

Source: DEEWR, *ICT Labour Market Indicators*, February 2013.

The data picture - temporary migration

Number of primary subclass 457 visa applications granted for selected ICT workers



Source: Department of Immigration and Citizenship data, 2012.



Key challenges for ICT skills development

1. Student perceptions of ICT careers are largely negative, engagement in STEM subjects remains low, and there is little confidence in the provision of ICT education in schools.
2. Some employers are not confident that the tertiary education system can supply competent, confident, work ready graduates.
3. Women, Indigenous Australians, mature-aged workers and people with disability are underrepresented in ICT employment.
4. Industry does not sufficiently invest in workforce development and upskilling.



ICT workforce study - recommendations



Growing the ICT skills pipeline and improving the status of ICT careers

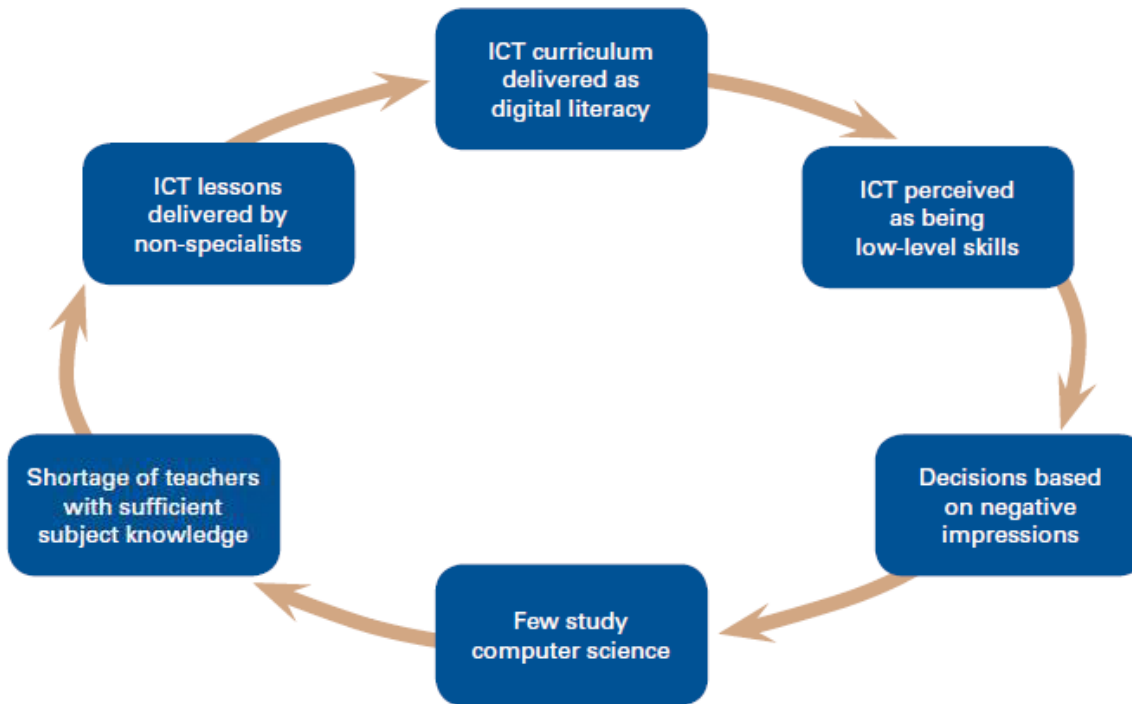
Ensuring the supply of high-quality ICT skills

Developing, retaining and effectively using ICT skills in the workforce

Increasing the diversity of ICT employment

Strategies to improve data collection on ICT skills supply and demand

The ICT skills pipeline and the status of ICT careers



Source: Adapted from Royal Society (UK), 2012, *Shut down or restart? The way forward for computing in UK schools*, p. 7.

Improve the ICT Skills pipeline and the status of ICT careers

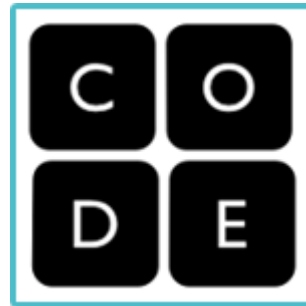
- With declining enrolments in ICT courses, the key challenge is to encourage young people to consider careers in ICT.
- However, the skills pipeline from schools into the ICT sector is adversely affected by the quality of both the ICT curriculum and its delivery in schools.
- Stakeholders, including the ICT industry, need to engage with schools to improve the quality of ICT education, and increase its relevance to the industry.

AWPA recommends:

- ACDICT, NICTA and Education Services Australia pilot a semester long ICT online module for secondary students
- Better support for ICT teachers, including pre-service programs and scholarships for upskilling
- Enhanced participation by ICT professionals in school visits
- Career promotion products targeting diverse cohorts and delivered across all media and platforms.

Industry-school partnerships and innovative approaches to promoting ICT

Group  Educators



Ensuring the supply of high-quality skills

- The work readiness of domestic graduates does not meet industry expectations. Industry needs T-shaped professionals with a combination of technical expertise, domain knowledge and business skills.
- There is evidence that many ICT students do not find their qualifications relevant to their main paid job.
- In addition to specialist ICT skills, there is the need to integrate generic ICT skills into existing tertiary programs across a range of sectors.

AWPA recommends:

- that ACDICT and other deans' councils promote the incorporation of digital literacy into all undergraduate degrees
- that ACDICT, ACS and AIIA pilot a ICT-intensive skills conversion program aimed at recent graduates from other disciplines

A more strategic approach to work-integrated learning

- Across all industry sectors, work-integrated learning (WIL) is recognised as a valuable pathway from study to employment.
- WIL could be improved through increased funding, a richer evidence base and improved integration of work experience and learning outcomes.
- A range of WIL programs are available to students in ICT courses at Australian universities.

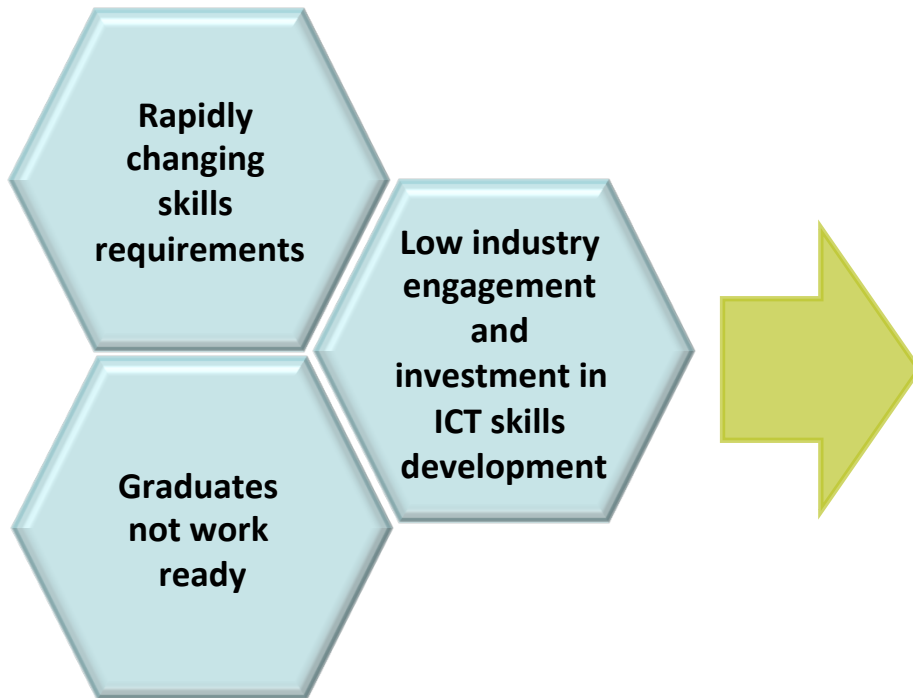


University of Ballarat
Technology Park



AWPA recommends that the Australian Government, tertiary education providers and industry expand and improve WIL by expanding programs, balancing employability and lifelong learning skills, engaging with more SMEs and supporting a longitudinal evaluation of WIL programs.

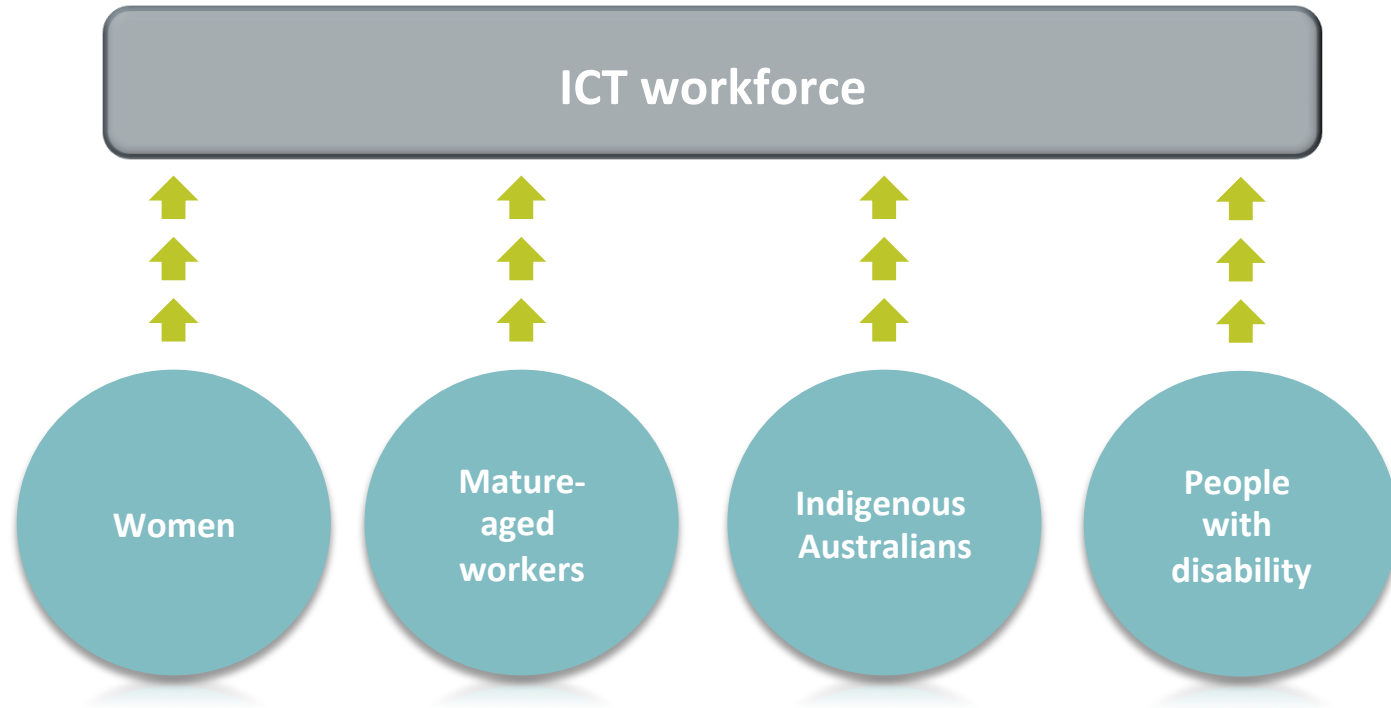
Developing, retaining and effectively using ICT skills in the workforce



ICT workforce study recommends:

- ACS and AIIA develop and pilot a one-year professional experience program for entry-level ICT professionals
- Cross-sector programs highlighting high-performing workplaces using ICT intensive skills
- Promoting the NWDF as a mechanism to upskill and reskill workers.

Increasing the diversity of ICT employment



AWPA recommends:

Improving attraction and retention of women, mature-aged workers, Indigenous Australians and people with disability by increasing flexibility and retraining opportunities, developing reconciliation action plans and codes of best practice, and offering mentoring and placed-based approaches to match job seekers with ICT employers.



Strategies to improve data collection on ICT skills supply and demand

- Rapid development of new occupations driven by technological change a challenge for data classification and collection.
- Not all occupations captured in the current ABS ICT occupations list.

ICT workforce study recommends:

Review of ABS ICT-related collections to help ensure accurate, comprehensive and up-to-date measurement of the ICT workforce and ICT activity in the economy.

Implementation

- AWPAs worked with key education and industry bodies to assign responsibility for each recommendation.
- The recently released update to the National Digital Economy Strategy includes two announcements that will assist with the implementation of the recommendations:
 - the formation of a group of industry representatives and tertiary education stakeholders
 - \$6.5 million over four years for the Digital Careers initiative.





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